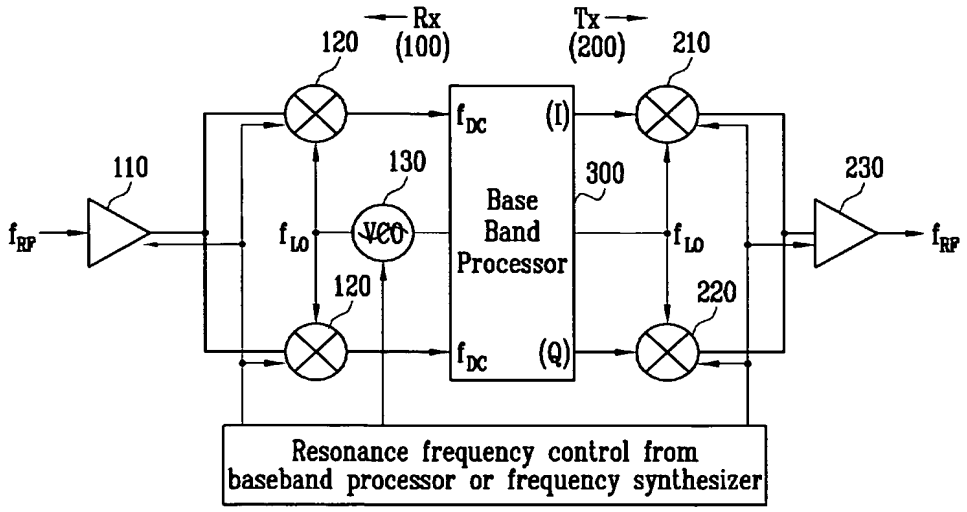
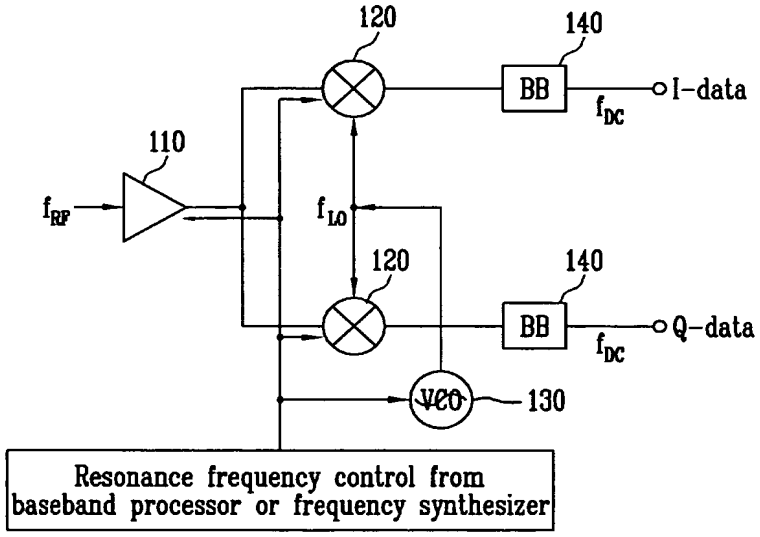
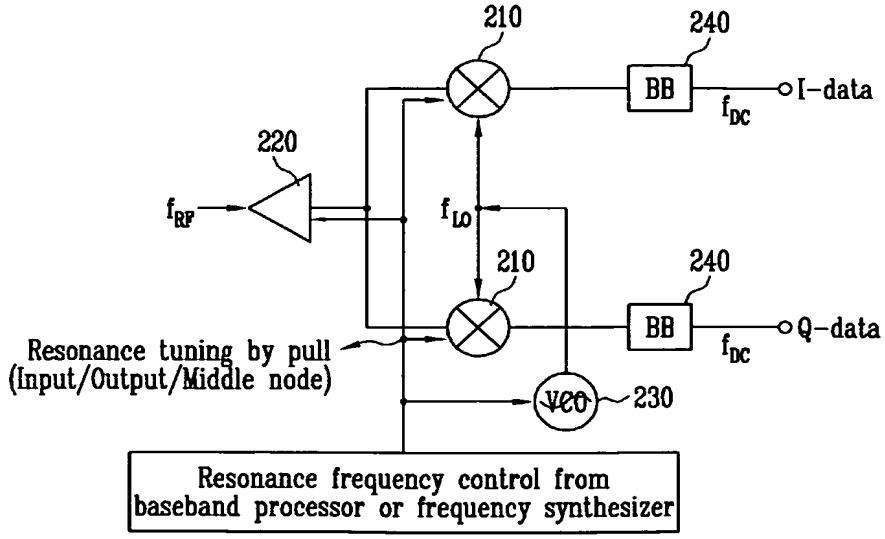
[Fig. 1]



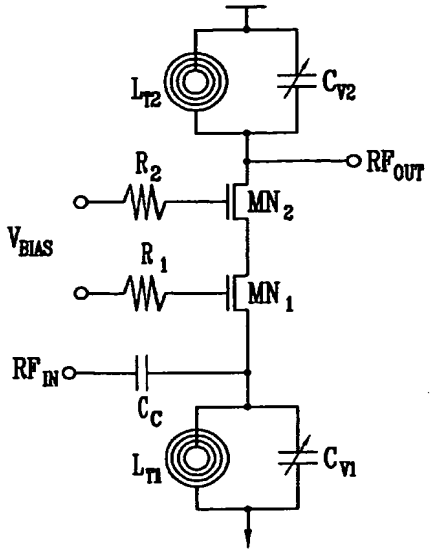
[Fig. 2]



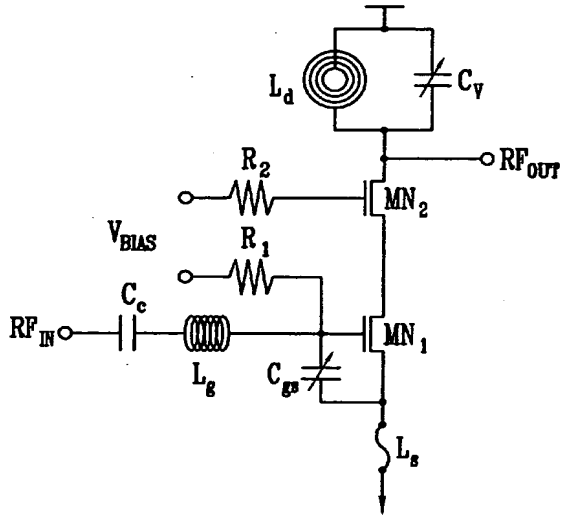
[Fig. 3]



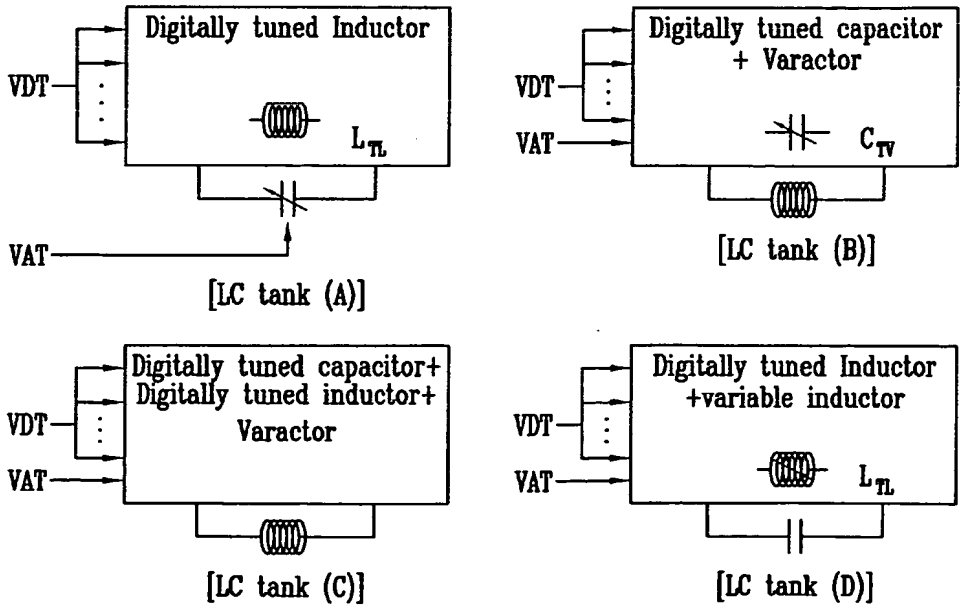
[Fig. 4]



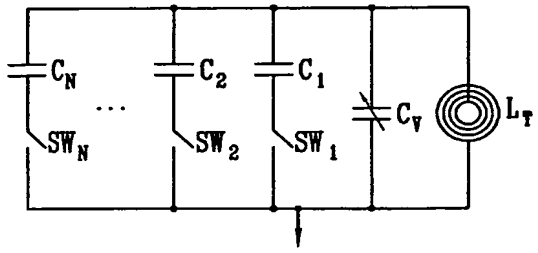
[Fig. 5]



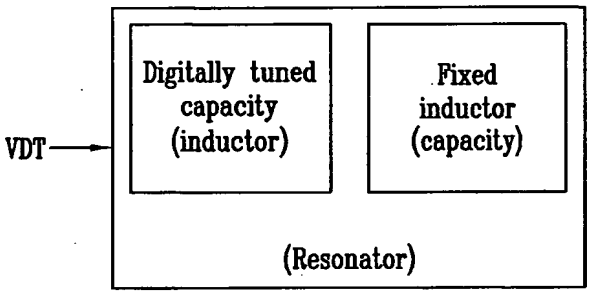
[Fig. 6]



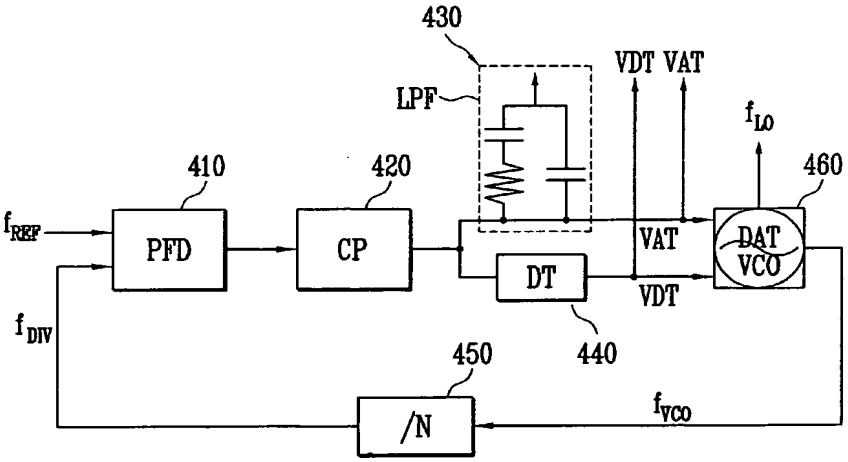
[Fig. 7]



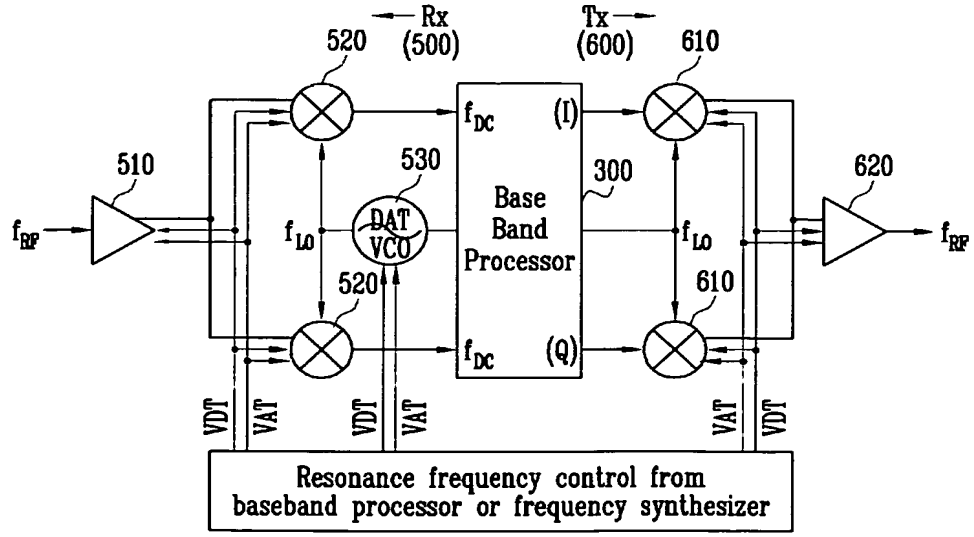
[Fig. 8]



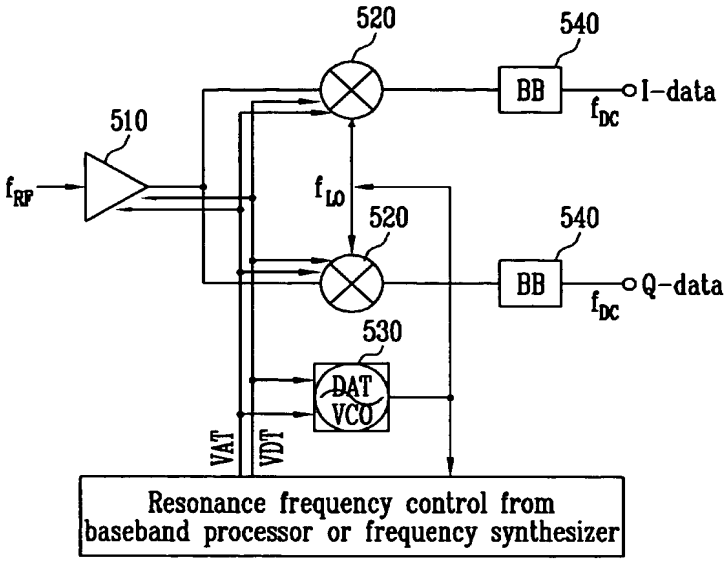
[Fig. 9]



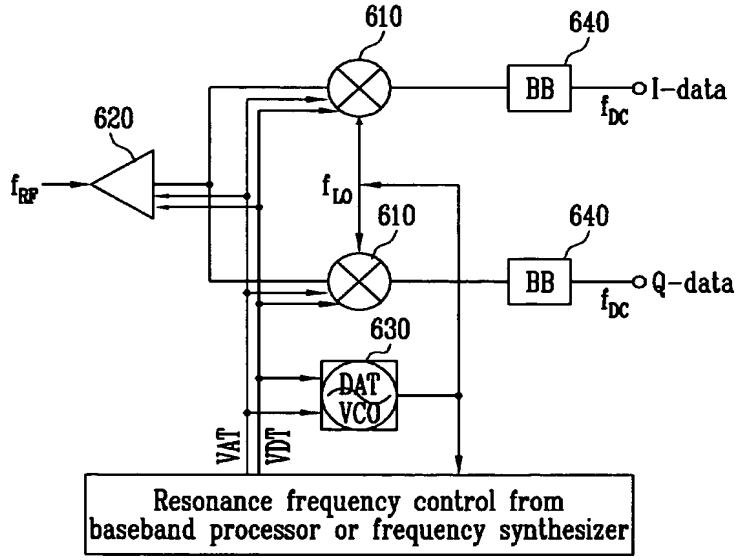
[Fig. 10]



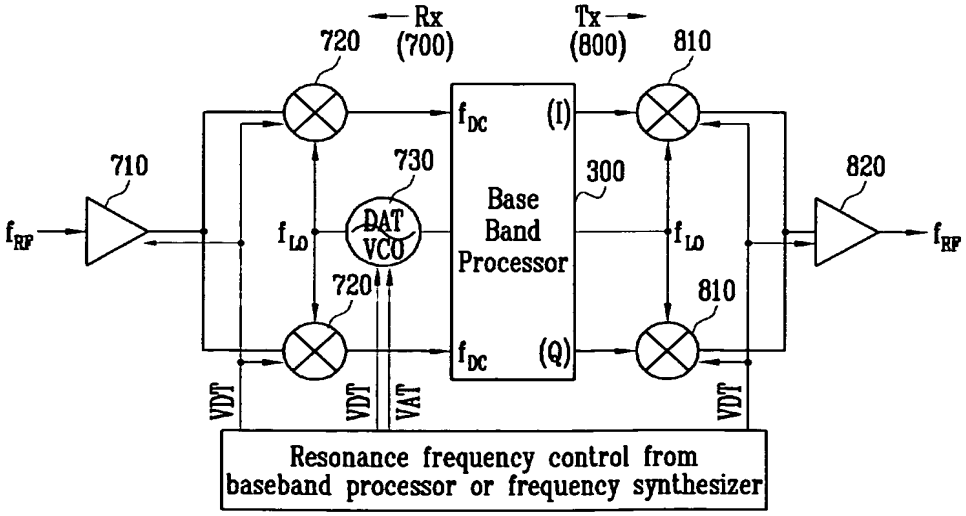
[Fig. 11]



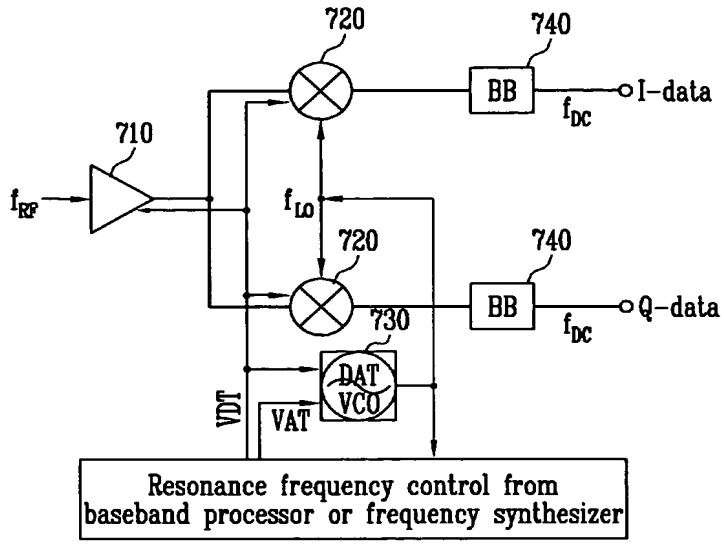
[Fig. 12]



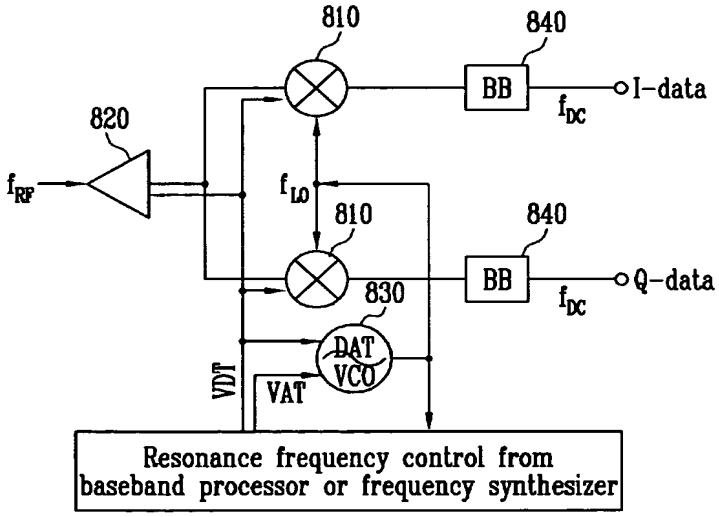
[Fig. 13]



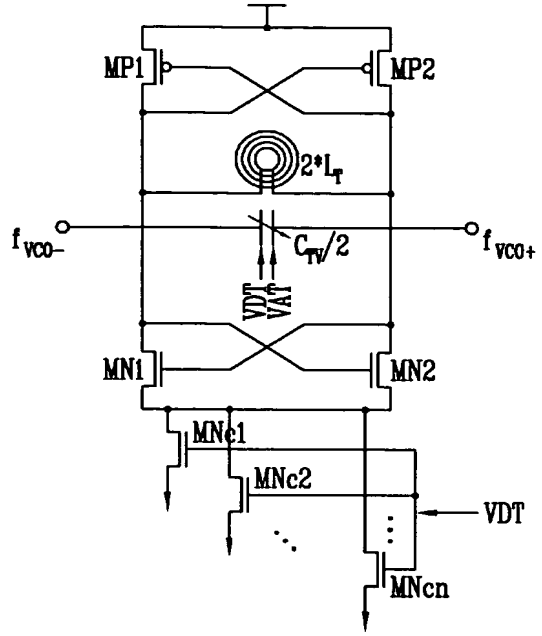
[Fig. 14]


720
740
BB
I-data
f_{DC}
710
f_{RF}
f_{LO}
720
740
BB
Q-data
f_{DC}
730
DAT
VCO
VDT
VAT
Resonance frequency control from baseband processor or frequency synthesizer

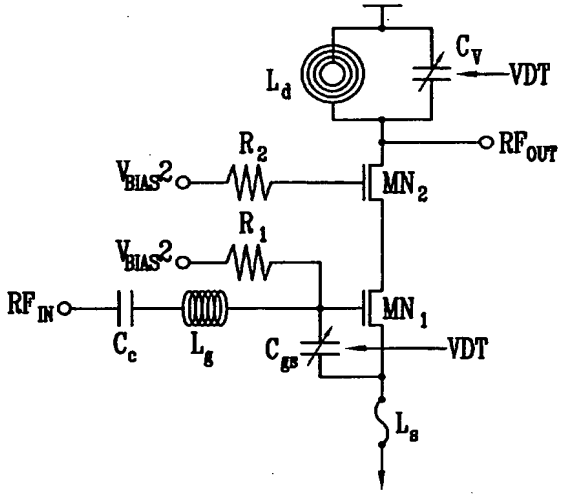
[Fig. 15]


810
840
BB
I-data
f_{DC}
820
f_{RF}
f_{LO}
810
840
BB
Q-data
f_{DC}
830
DAT
VCO
VDT
VAT
Resonance frequency control from baseband processor or frequency synthesizer

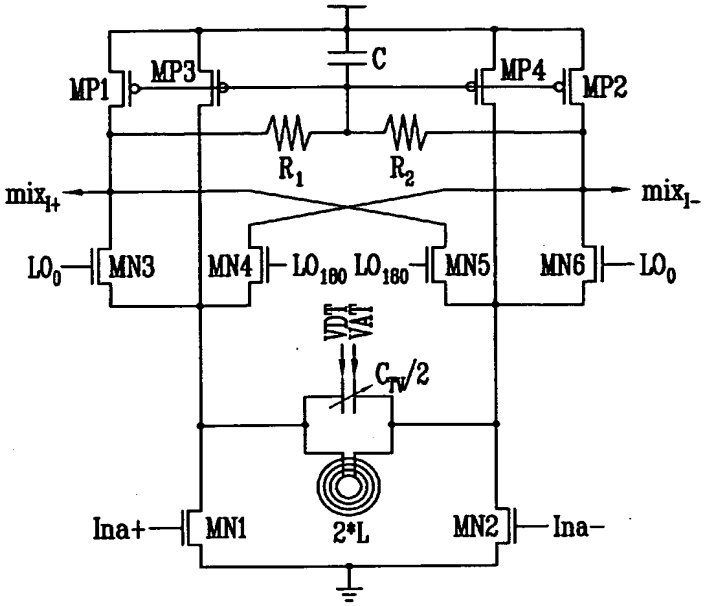
[Fig. 16]


MP1
MP2
2*L_T
f_VCO-
C_TV/2
f_VCO+
VDT
VAT
MN1
MN2
MNc1
MNc2
VDT
MNcn

[Fig. 17]


L_d
C_V
VDT
RF_OUT
R_2
V_BIAS2
MN_2
R_1
V_BIAS2
RF_IN
MN_1
C_c
L_g
C_gs
VDT
L_s

[Fig. 18]


C
MP1
MP3
MP4
MP2
R1
R2
mix1+
mix1-
LO0
MN3
MN4
LO180
LO180
MN5
MN6
LO0
VDT
VAT
CTV/2
Ina+
MN1
2*L
MN2
Ina-